

## SHORT COMMUNICATION

***Hibbertia tuberculata* (Dilleniaceae), a new, rare species from Western Australia**

During a 2009 flora and vegetation survey of the Forrestania Greenstone Belt (Thompson & Allen 2013), a specimen of *Hibbertia* Andrews was collected from a rocky basalt area east of North Ironcap and north-west of Lake Cronin Nature Reserve. The specimen closely matched an earlier collection provisionally determined by J. Wheeler at the Western Australian Herbarium as *H. aff. oligantha* J.R.Wheeler, collected by Ken Newbey in 1981 from a nearby locality. Subsequently, further collections have been made from the Mount Holland area c. 20 km further north. The specimens are consistent, distinctive and not referable to any known species; accordingly, they are here described as *H. tuberculata* K.R.Thiele *sp. nov.*

***Hibbertia tuberculata*** K.R.Thiele, *sp. nov.*

*Type:* c. 100 km S of Southern Cross, Western Australia [precise locality withheld for conservation reasons], 23 August 2019, B. Ellery BE 1415 (*holo:* PERTH 09155317; *iso:* AD, CANB, K, MEL).

Low, spreading, woody *shrubs* to 45 cm high, with papery, exfoliating bark on all but the youngest stems, which are reddish and sparsely hairy with minute, spreading to retrorse hairs c. 0.02 mm long. *Leaves* crowded on new growth, erect to spreading, scattered, shortly petiolate and slightly stem-clasping at the base, green, elliptic to linear, (2–)3–5 mm long, 0.8–1.2(–2) mm wide, prominently tuberculate and sparsely hairy with short, simple hairs to 0.3 mm long, each hair arising antrorsely from a tubercle; margins revolute to the broad, tuberculate midrib, obscuring the minutely papillate true abaxial surface; apex obtuse to subacute, ± straight. *Flowers* solitary, terminating short lateral shoots, ± sessile; *bracts* 3–7, narrowly triangular to narrowly ovate, 0.8–1.2 mm long, 0.2–0.3 mm broad, acute, ± glabrous except for minutely ciliolate margins, sometimes scarious in the upper half. *Sepals* 5; outer sepals broadly ovate, acute but not pungent, (4.5–)5–6 mm long, glabrous, without a prominent midrib; inner sepals similar to the outer ones but broader and less acute. *Petals* 5, yellow, obovate, 6–8 mm long, slightly emarginate. *Stamens* (9–)12–14, free, erect, arranged on one side of the carpels, varying in size but without true staminodes; filaments free to the base, 0.5–1.9 mm long; anthers linear-oblong, 0.5–2.0 mm long, dehiscing by longitudinal slits. *Carpels* 2; ovaries ± oblong, glabrous; styles lateral and strongly reflexed from ovary apex then spreading-erect, c. 3–4 mm long. *Ovules* 2–4 per carpel. *Fruiting carpels* and seeds not seen. (Figure 1)

*Diagnostic features.* May be distinguished from all other species of *Hibbertia* in Western Australia by the combination of sessile flowers with 3–7, narrowly triangular to narrowly ovate bracts, erect stamens with free filaments on one side of the two glabrous carpels, and leaves (2–)3–5 mm long and prominently tuberculate.

*Other specimens examined.* WESTERN AUSTRALIA [localities withheld for conservation reasons]: 11 Sep. 2017, D. Angus 2916 (PERTH); 7 Oct. 1981, K.R. Newbey 9251 (PERTH); 5 Oct. 2009, W. Thompson & J. Allen 950 (PERTH).



Figure 1. Flowering branch of *Hibbertia tuberculata*. Photo: W. Thompson (W. Thompson & J. Allen 950).

**Phenology.** The known collections were flowering in September and October.

**Distribution and habitat.** Occurs from Lake Cronin and North Ironcap to near Mount Holland, in the Southern Cross subregion of the Coolgardie IBRA Bioregion (Figure 2).

The type locality is a gentle slope with rocky, red-brown sandy clay soils developed on greenstone. Associated vegetation is an open heathland of *Melaleuca cliffortioides*, *Allocasuarina campestris* and *Dodonaea adenophora* over low, sparse *Grevillea lissopleura* and *Trymalium myrtillus* subsp. *myrtillus*. The Newbey specimen was collected from a gentle slope on an undulating plain of well-drained, crumbly red clay supporting *Melaleuca cardiophylla* dwarf scrub. The site near North Ironcap is a rocky hill crest with exposed greenstone bedrock and shallow red-brown clay-loam soils, where *H. tuberculata* grows with *Eucalyptus protensa*, *Santalum acuminatum*, *Allocasuarina helmsii*, *Trymalium myrtillus* subsp. *myrtillus*, *Acacia kerryana*, *A. pachypoda*, *Grevillea acuararia*, *Eutaxia nanophylla* and *Hemigenia* aff. *diplanthera*. All known localities are on fine and medium-grained mafic amphibolite with metabasalt regolith adjacent to banded chert (Chin *et al.* 1984).

**Conservation status.** The three known collection localities are all within c. 25 km of each other, and none is in a current conservation area. Accordingly, a status of Priority One is appropriate under the Conservation Codes for Western Australian Flora (M. Smith pers. comm.).

**Etymology.** From the Latin *tuberculatus* (tuberculate, covered with wart-like projections), in reference to the leaves.

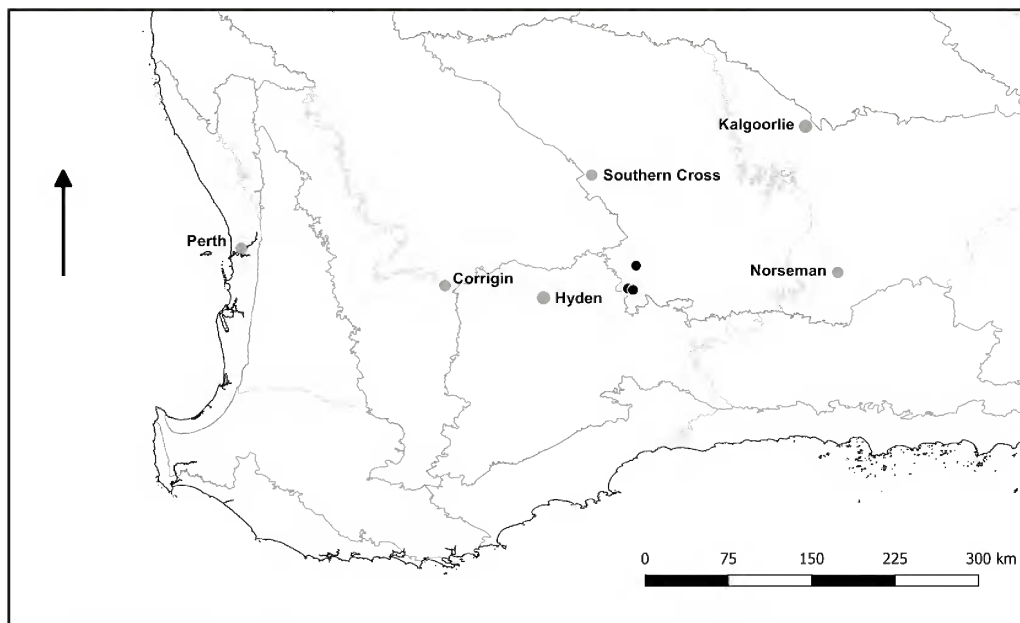


Figure 2. Distribution of *H. tuberculata*. Shaded lines show the boundaries of IBRA6.1 bioregions (Department of the Environment, Water, Heritage and the Arts, 2008).

*Notes.* *Hibbertia tuberculata* belongs in *H.* subg. *Hemistemma* (DC. in Thou.) J.W. Horn and is relatively unusual amongst Western Australian species of that subgenus in having erect, free stamens on one side of two glabrous carpels, and spreading-erect styles. In most other Western Australian species with stamens on one side of two carpels, the carpels are densely hairy, the staminal filaments are fused at their bases and the stamens are arranged like a hand of bananas curving forward over the carpels, with the short styles curved beneath them. Only three other Western Australian species, *H. andrewsiana* Diels, *H. psilocarpa* J.R. Wheeler and *H. oligantha* J.R. Wheeler, share this arrangement of stamens and carpels with *H. tuberculata*; the pattern is more commonly seen in eastern Australian species of subg. *Hemistemma*.

*Hibbertia tuberculata* is morphologically most similar to *H. oligantha*. It is a woodier shrub than *H. oligantha*, with stout branchlets and very short seasonal growth units, whereas *H. oligantha* has a softer appearance with long, more or less straight seasonal shoots. The leaves of *H. oligantha* are longer (3.5–15 mm long), narrower (0.6–1 mm wide), and are typically smooth and glabrous (occasionally with obscure tubercles), unlike the short ((2–)3–5 mm long), broad (0.8–1.2(–2) mm wide), prominently tuberculate leaves of *H. tuberculata*. The distributions of the two species do not overlap, *H. oligantha* occurring from Esperance to Ravensthorpe and inland to the vicinity of Peak Charles. Two PERTH specimens currently included in *H. oligantha* from near Salmon Gums (*R.D. Hoogland* 12051 and *W.E. Blackall* 1038) have fine, trichome-tipped tubercles. These are likely to comprise another new species, which differs from *H. tuberculata* in the finer, denser tubercles and distinctly hairy leaves.

*Hibbertia psilocarpa* has smooth, often glaucous leaves which, when hairy, have fine, straight, erect, non-tubercle-based hairs, 4–8(–10) stamens, and styles that are not strongly reflexed from the carpel apex. *Hibbertia andrewsiana* has slender-pedicellate flowers with a single floral bract at the apex of the often sigmoid pedicel.

### Summary of taxon circumscriptions

*Hibbertia tuberculata* K.R.Thiele *sp. nov.* in this paper does not cause the recircumscription of any other taxon.

### Acknowledgements

I thank Wendy Thompson for bringing this species to my attention, and Kelly Shepherd and Juliet Wege for helpful comments on the manuscript.

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